

# Business Math

<b>Levels:</b>	<b>Grades 10-12</b>
<b>Units of Credit:</b>	<b>0.50</b>
<b>CIP Code:</b>	<b>52-0311</b>
<b>Core Code:</b>	<b>32-01-00-00-001</b>
<b>Prerequisite:</b>	<b>None</b>
<b>Skill Test:</b>	<b>None</b>

## COURSE DESCRIPTION

The Business Math course reinforces basic math skills and its relevance to everyday applications. These skills encompass the ability to solve mathematical problems, analyze and interpret data, and apply sound decision-making skills in helping students fulfill their future roles as citizens, consumers, employees, employers, investors, inventors, and entrepreneurs.

**Intended Learning Outcomes:** Students will be able to build upon a foundation of basic mathematical procedures by using number relationships and operations. Students will recognize patterns, functions and algebraic equations for a given scenario. In addition students will be able to analyze data to solve business/consumer-related problems.

By the end of the Business Math course students will demonstrate a developmental approach to the acquisition of computations skills.

## CORE STANDARDS, OBJECTIVES, AND INDICATORS

### STANDARD 1

**Students will be able to calculate answers to problems using addition, subtraction, multiplication, and division.**

**Objective 1:** Select and use appropriate tools when solving problems (e.g., paper and pencil, manipulatives, hand-held calculators, Web calculators, computer numerical keypads, and spreadsheets.)

**Objective 2:** Identify and use appropriate mathematical operations (e.g. +, -,  $\times$ ,  $\div$ ,  $x^y$ ,  $\frac{x}{y}$ ) for given problems.

**Objective 3:** Demonstrate understanding of mathematical processes through oral and written means (e.g. unit summaries).

### STANDARD 2

**Students will solve problems involving whole numbers, decimals, fractions, percents, ratios, and proportions.**

**Objective 1:** Setup and solve problems that involve percents, ratios, and proportions and use appropriate conversions (e.g., decimals to percents, percents to decimals, or ratios to percents).

**Objective 2:** Use percentage formulas to solve practical problems in business and consumer related problems (e.g. trade and cash discounts, markup/markdown, profit margins)

**Objective 3:** Solve problems involving percentage increase and decrease.

### STANDARD 3

**Use algebraic operations to solve problems.**

**Objective 1:** Construct and solve an algebraic equation for a given problem (e.g. simple interest, compound interest, sales tax, unit pricing, markup/markdown, percentage formula).

**Objective 2:** Apply the order of operations principle when using mathematical processes (e.g. multiply/divide before adding, multiple/divide before subtracting, complete operations in parenthesis first).

**Objective 3:** Solve for the missing variable in formulas (e.g. simple interest, compound interest, sales tax, unit pricing, markup/markdown, percentage formula).

#### **STANDARD 4**

**Students will be able to solve various sales and marketing discounts and markup computations.**

**Objective 1:** Compute various discounts (cash discounts, chain/discount series, quantity discounts, and trade discounts) involved in purchasing as a retailer, including purchases orders and invoices.

**Objective 2:** Figure net price after discounts.

**Objective 3:** Compute mark-ups and mark-downs.

#### **STANDARD 5**

**Students will demonstrate knowledge of financial transactions by comparing the use of cash, checking accounts, credit cards, charge accounts, and loans.**

**Objective 1:** Analyze finance charges and compare the various types of finance and loan charges to each other.

**Objective 2:** Compare purchase costs using cash, check, credit cards, and charge accounts.

**Objective 3:** Maintain a check register and reconcile a bank statement.

#### **STANDARD 6**

**Students will calculate gross and net pay for different types of pay options for salary and hourly employees.**

**Objective 1:** Define various options for how individuals are paid (i.e. salary, hourly, commission, overtime and tips). Be able to calculate gross pay per pay period.

**Objective 2:** Understand and calculate federal, state and local taxes.

**Objective 3:** Understand and calculate Social Security and Medicare taxes.

#### **STANDARD 7**

**Students will analyze and interpret data from common sources.**

**Objective 1:** Read and interpret tables, charts, and graphs (such as mileage, tax and postage).

**Objective 2:** Make inferences about data from tables, charts, and graphs (e.g. bar, broken-line, pie, and pictograph).

**Objective 3:** Use data from charts to estimate and calculate measures of central tendency (mean, median, mode, and range).

#### **STANDARD 8**

**(Optional) Students will apply concepts learned in Standards 1-7 by using spreadsheet software as a way of showing that technology plays a major role in mathematics used in the workplace.**

**Objective 1:** Create spreadsheets using data that reflects areas covered in Standards 1-7 and applying the necessary calculations (formulas).

**Objective 2:** Learn the necessary spreadsheet functions to create spreadsheets that are easy to read and present the information clearly.

**Objective 3:** Select the appropriate chart or graph for the data being presented.